

AMENDMENTS TO THE CLAIMS

1. (Original) A packaging structure comprising at least one semiconductor device bonded to a chip carrier or heat spreader with an adhesive, wherein the adhesive is reworkable and thermally conductive and comprises a cured reaction product from a diepoxide and cyclic anhydride wherein the epoxy groups are connected through an acyclic acetal moiety; and

a thermally conductive filler.

2. (Original) The packaging structure of claim 1 wherein the diepoxide is a cycloaliphatic diepoxide.

3. (Original) The packaging structure of claim 1 wherein the diepoxide is selected from the group consisting of acetaldehyde bis (3,4-epoxycyclohexylmethyl) acetal, acetone bis-(3,4- epoxycyclohexylmethyl) ketal, and formaldehyde bis- (4,4-epoxycyclohexylmethyl) acetal.

4. (Original) The packaging structure of claim 1 where the diepoxide is acetaldehyde his- (3,4-epoxycyclohexylmethyl) acetal.

5. (Original) The packaging structure of claim 1 wherein the filler is non-electrically conductive.

6. (Original) The packaging structure of claim 1 wherein the filler is selected from the group consisting of silver flake, aluminum nitride and silica-coated aluminum nitride.

7. (Original) The packaging structure of claim 1 wherein the filler is aluminum nitride or silica-coated aluminum nitride.

8. (Original) The packaging structure of claim 1 where the adhesive further comprises a thixotropic agent.

9. (Original) The packaging structure of claim 1 wherein the filler is electrically conductive.

10. (Original) The packaging structure of claim 1 where the thixotropic agent comprises silica or siloxane-coated fumed silica.

11. (Original) The packaging structure of claim 10 wherein (a) the amount of diepoxide is about 10 to about 30% by weight, (b) the amount of cyclic anhydride is about 10 to about 30% by weight, (c) the amount of filler is about 40% to about 79% by weight and (d) thixotropic agent about 0.05 to about 2% by weight, the amounts being based on the total of (a), (b), (c) and (d) in the composition.

12. (Original) The packaging structure of claim 1 wherein the adhesive provides a void-free bond.

13. (Original) The packaging structure of claim 1 wherein the at least one semiconductor device is bonded to a chip carrier and is electrically connected to the chip carrier with wirebonds.

14. (Original) The packaging structure of claim 1 wherein the at least one semiconductor device is a flip chip and the flip chip is bonded to the heat spreader.

15. (Original) The packaging structure of claim 14 which further comprises an underfill encapsulant.

16. (Original) A method for fabricating a packaging structure which comprises bonding at least one semiconductor device to a chip carrier by applying a composition comprises a diepoxide wherein the epoxy groups are connected through an acyclic acetal moiety, a cyclic anhydride and a thermally conductive filler; and curing the composition to provide a reworkable and thermally conductive adhesive.

17. (Original) The method of claim 16 wherein the diepoxide is a cycloaliphatic diepoxide.

18. (Original) The method of claim 16 wherein the diepoxide is selected from the group consisting of acetaldehyde his- (3,4-epoxycyclohexylmethyl) acetal, acetone his- (3,4-epoxycyclohexylmethyl) ketal, and formaldehyde his- (3,4-epoxycyclohexylmethyl) acetal.

19. (Original) The method of claim 16 where the diepoxide is acetaldehyde his- (3,4-epoxycyclohexylmethyl) acetal.

20. (Original) The method of claim 16 wherein the filler is non-electrically conductive.

21. (Original) The method of claim 16 wherein the filler is selected from the group consisting of silver flake, aluminum nitride and silica-coated aluminum nitride.

22. (Original) The method of claim 16 wherein the filler is aluminum nitride or silica-coated aluminum nitride.

23. (Original) The method of claim 16 wherein the adhesive further comprises a thixotropic agent.

24. (Original) The method of claim 16 wherein the thixotropic agent comprises silica or siloxane-coated formed silica.

25. (Original) The method of claim 24 wherein a) the amount of diepoxide is about 10 to about 30% by weight, b) the amount of cyclic anhydride is about 10 to about 30% by weight, c) the amount of filler is about 40 to about 79% by weight and c) thixotropic agent is about .05 to about 2% by weight, the amount being based upon the total of a), b), c) and d) in the composition.

26. (Original) The method of claim 16 wherein the at least one semiconductor device is electrically connected to the chip carrier with wirebonds after curing of the composition.

27. (Original) The method of claim 16 wherein the at least one semiconductor device is a flip chip and wherein the flip chip is bonded to a heat spreader.

Claims 28-35 cancelled.